



Westinghouse Electric Corporation

Defense and Space Center

Friendship International Airport

Box 746, Baltimore, Md. 21203

Telephone: (301) 761-1000

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**Advanced Plans & Programs Office (ASZ-5)
Deputy for Systems Management
Hq., Aeronautical Systems Division
Wright-Patterson Air Force Base, Ohio**

**Subject: Contract AF33(600)40280
Westinghouse Reference: DTD-45196**

**Enclosure (1): Three (3) copies Progress Report
August 1 through August 31, 1964**

Gentlemen:

**In accordance with the subject contract, we are
enclosing the progress report for the period indicated.**

Very truly yours,

WESTINGHOUSE ELECTRIC CORPORATION

[Redacted Signature]

**Marketing Specialist
Marketing Department**

STAT

RWB:sb

**cc: [Redacted]
(with one copy Enclosure 1)**

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SPECIAL HANDLING

Copy 2 of 5.

PROGRESS REPORT

Period of August 1, 1964 to August 31, 1964

Contract Number AF33(600)40280

BY

WESTINGHOUSE ELECTRIC CORPORATION

AEROSPACE DIVISION

P.O. Box 746, Baltimore 3, Md., 21203

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A. F-101 FLIGHT TEST

The 300 hour periodic inspection on the F-101 aircraft prevented any system flights this month. With the inspection 95% complete, all structural repairs have been completed. All T.O.'s and TWX's have been completed, except a few which cannot be accomplished because of the modified aircraft configuration.

Receiver tests continued through this period. Outcome of the tests has been the recommendation to increase the video amplifier bandwidth. This modification reduces the number of overshoots following a pulse. The accompanying reduced video gain causes no difficulty in driving the CRT's now available.

The video amp breadboard was also modified to test a range boost system. This range boost extends the high frequency response of the video amp to compensate for recorder high frequency roll-off. The proper amount of boost will be determined in flight test.

The transmitter pulse forming network was changed to narrow the pulse and improve range resolution. Output power is decreased but sufficient for this flight test program. Reducing the transmitted pulse from 30 to 20 nanoseconds decreases the received pulse at the cathode ray tube grid from 30 to 29 nanoseconds. The response of the IF amplifiers limits the minimum received pulse width.

The variable ground speed inverter and control circuits were removed from the recorder to minimize ac pickup on the CRT display. These units were mounted external to the recorder.

To accommodate flight tests at two different altitudes, the Doppler Frequency Tracker was modified to allow the gate to be positioned in flight at either 90 or 180 microseconds range. The switching for recorder blanking has not yet been incorporated.

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The preflight checklist was updated to agree with the modified system to be flown the following month.

Two signals--antenna accelerometer output and accelerometer network output--were reinstated to the instrumentation magnetic tape recorder to facilitate analysis of the linear motion compensation system.

Operational checks on the instrumentation were begun late in this period. Complete signal calibrations will be conducted early next month.

B. PHASE II FLIGHT TEST

The antenna servo was tested with the INS. Trouble was encountered with the INS. It appears that the drift, roll, and pitch outputs of the INS are affected when the navigation system is switched from one mode to another, independent of the radar. Further investigation is required.

Testing continued on the first delivered system. A wide variation in film density was encountered on Recorder 006. After exchanging cathode ray tubes with Recorder 007, the first film density tests were unsatisfactory because of developing. Recorder 007 was returned to Westinghouse to be modified.

The cause for the transmitter overload relay to trip has not yet been determined.

Minor modifications included new lifting eyes installed on the frame, test relay added in the Nav Tie-In, and a diode added to Programmer to prevent relay chattering.

The second delivered system, 003, was received in the field on August 12. Power supply voltages, stalo lockup, and receiver

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noise figure were normal. The pulsed 120 mc signal from the frequency generator was unreliable and prevented proper transmitter operation.

The spherical and corner reflectors were installed at the Phase II testing site to check resolution and detectability.

Following a request by Westinghouse concerning vibration near the Single Axis Platform location, instrumentation people of the prime contractor concluded there were no significant resonances in the critical 200 and 400 cps region.

Major items delivered to the Phase II testing area were:

- (1) antenna test stand and dummy antenna for testing antenna servo
- (2) lifting fixture.

C. ANTENNA

Tests continued on the antenna pressure sealing problem. Four samples of I8 fabric, cured at different times and temperatures, were bonded and tested. Best cure was the highest temperature. Larger supplies of fabric have been ordered from the supplier.

The new supply of Doryl varnish was not acceptable. The supplier has suggested the addition of a small amount of Ferric Acetyl Acetate be added to speed up the reactions and provide a stronger bond. The catalyst and a new supply of Doryl were ordered.

D. SPARES

About 96 per cent of the system spares have been delivered. During August, 25 items were added to the spares list.

Ground Support Spares are about 95% complete; no items were added to the GSE spares this month.

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